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ILLUSTRATIONS OF FUNGI—XXV

WILLIAM A. MURRILL

Several species of the genus *Venenarius,* formerly called *Amanita,* were figured in MYCOLOGIA **5**: *pl. 87.* The accompanying plate shows additional varieties of the deadly amanita and another species which is quite rare. The drawings were made by Miss Eaton from specimens collected in or near New York City.

Venenarius solitarius (Bull.) Murrill

Amanita solitaria Fries

WARTED AMANITA PINE-CONE AMANITA

Plate 190. Figure 1. × 1

Pileus subglobose or convex, to plane, solitary, 5–20 cm. broad; surface dry, usually white or slightly yellowing, rarely cinereous or murinous, densely pulverulent, or pelliculose adorned with seceding, angular warts that may be soft, floccose, and flattened, or firm and erect, often becoming glabrous with age, margin smooth, at times appendiculate; context firm, white usually of mawkish flavor and odor resembling that of chlorin; lamellae usually adnexed and rather narrow, occasionally free and rounded behind, more or less crowded, white; spores ellipsoid, smooth, hyaline, very variable in size, 7–14 × 5–9 μ; stipe subequal, usually radicate, bulbous or enlarged or equal below, concolorous or paler, mealy above, squamulose or imbricate-squamose below, solid or slightly spongy, 4–15 cm. long, 1–4 cm. thick; annulus white, apical, fragile or lacerate, often appendiculate or evanescent; volva white, usually friable, rarely remaining as concentric, margined scales or a short limb at the base of the stipe.

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ILLUSTRATIONS OF FUNGI

An exceedingly variable species, usually white and scaly and often with a chlorin odor, occurring in the open or in thin woods throughout most of the United States. It has been considered edible, but Ford finds that it contains a small quantity of the deadly amanita-toxin found in *Venenarius phalloides* and it should therefore never be eaten. The variety here figured is one of the rarest forms assumed by this species in America, representing *Agaricus echinocephalus* Vitt. and *Agaricus onustus* Howe.

Venenarius glabriceps (Peck) Murrill

SMOOTH-CAPPED AMANITA

Plate 190. Figure 2. × 1

Pileus thin, ovoid, becoming broadly convex or centrally depressed, 5–10 cm. broad; surface glabrous, viscid when moist, rarely adorned when young with a few patches of the ruptured volva, white or yellowish-white, sometimes slightly brownish at the center, margin usually finely striate; context white; lamellae thin, crowded, free, unequal, white; spores globose, smooth, hyaline, 7.5 μ; stipe long, slender, stuffed, glabrous or floccose-squamulose, white, bulbous at the base, 7.5–15 cm. long, 6–12 mm. thick; annulus thin, white, sometimes appendiculate or evanescent; volva adnate, marginate, definitely circumscissile.

This rare and elegant species occurs among fallen leaves in woods in New York state. The surface is usually glabrous from the first, as in white and yellow forms of *V. phalloides*. Peck says his *Amanita phalloides striatula* is a small variety of this species.

Vaginata albocreata (Atk.) Murrill

Amanitopsis albocreata Atk.

WHITE-BOOTED VAGINATA

Plate 190. Figure 3. × 1

Pileus convex to expanded, 5–8 cm. broad; surface viscid, with floccose volval patches which usually mostly disappear with age, white with yellow center, or at times entirely pale-yellow, margin finely striate and minutely tuberculate; context thin, white; lamellae free or slightly adnexed, rounded in front, narrowed behind, floccose on the edges; spores globose, smooth, hyaline, 7–10 μ; stipe cylindric or slightly tapering upward, abruptly bulbous, minutely floccose or farinose, white, hollow, 10–13 cm. long, 6–12

mm. thick; bulb ocreate, with limb narrow, as in *V. pantherinus,* and sometimes very slight; volval patches may occur in concentric lines on the lower part of the stipe.

Rare in open grassy places or thin woods from New York to Alabama. This species very much resembles *Venenarius glabriceps,* but is without an annulus. The volva is white and fits the base of the stipe closely like a stocking. Peck called this species *A. nivalis.*

Lepiota aspera (Pers.) Quél.

SPINY LEPIOTA

Plate 190. Figure 4. × 1

Pileus fleshy, hemispheric to convex and expanded, obtuse, at times depauperate, usually 7–12 cm. broad; surface appressed-tomentose, pale-ferruginous, decorated, especially near the center, with brown, compact, sometimes pointed, wart-like, separable scales; context moderately thick, white or yellowish; lamellae rather narrow, closely crowded, sometimes forked, white or yellowish, tapering behind, free, approximate; spores 5–10 × 2–4 μ; stipe thick, tapering upward from the bulbous base, fistulose or fibrous-stuffed, white and pruinose above the annulus, tomentose or fibrillose-scaly and ferruginous below, usually 8–12 cm. long, 8–12 mm. thick at the apex, and 18–25 mm. thick at the base; veil usually large, white, membranous, persistent, adherent in places to the margin of the pileus and annulate upon the stipe, at times reduced and fibrillose.

A rather frequent species in rich soil or humus in shaded places throughout most of the United States, and known under several names, such as *Lepiota acutesquamosa, L. Friesii, L. asperula,* and *L. eriophora.* It varies considerably in size and in the character of the spines, which are often reduced to mere wart-like, readily separable scales.

Venenarius phalloides (Fries) Murrill

Amanita phalloides Quél.

DEADLY AMANITA DESTROYING ANGEL

Plate 190. Figure 5. × 1

Pileus convex or campanulate to expanded, 3–15 cm. broad; surface smooth, slightly viscid when moist, glabrous or decorated with scattered patches of the volva, varying in color from pure-white to yellow, yellowish-green, green, gray, brown, or blackish,

margin rarely striate; context extremely poisonous, white, not objectionable to the taste but having at times a somewhat disagreeable odor; lamellae white, unchanging, broad, ventricose, rounded at the base and free or adnexed; spores globose, smooth, hyaline, 7–10 μ; stipe subequal, bulbous, long, smooth or floccose-scaly, usually white, stuffed or hollow, 6–15 cm. long, 0.5–1.5 cm. thick; annulus superior, membranous, thin, ample, persistent or at times becoming torn away, usually white; volva white, adnate to the base of the large, rounded bulb, the limb usually free, conspicuous, lobed, thick and fleshy, persistent, but at times breaking partly or wholly into irregular patches that are either carried up on the surface of the pileus or remain at the base of the stipe.

This most deadly species, for which no antidote is known, occurs widely distributed in many forms and colors, but is always distinguished by the presence of a distinct volva or death-cup at the base of the stipe. See Mycologia 5: *pl. 87, f. 1* for an illustration of the common white form known as the destroying angel. The brown form figured on the accompanying plate is very rare about New York City but quite common farther north, where it attains a larger size.

It is frequently stated that poisons may be removed from mushrooms by boiling them in water and throwing the water away. This may be true of some species, but it is by no means true of the deadly amanita. This species has only recently been subjected to severe tests with both dry heat and steam without disorganizing or extracting the poison from the substance of the cap.

The variety of colors assumed by this species—white, yellow, green, gray, brown, blackish—and the fact that the annulus and the limb of the volva may sometimes be lost, make it necessary to use great caution in selecting any white-gilled species with bulbous stipe for food, whether an annulus is present or not. All species of *Venenarius* and *Vaginata,* and several species of *Lepiota,* must be examined with great care.

NEW YORK BOTANICAL GARDEN.